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TRAUMA AND PHYSICAL HEALTH

BONNIE L. GREEN, PH.D. & PAULA P. SCHNURR, PH.D.

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In recent years, there has been increased attention and emphasis on the relationship between mental and physical health. This may, in part, be associated with changes in the delivery of health care, i.e., services are becoming more centralized, and treatment for mental health problems is often no longer possible without first receiving a referral from a primary care physician. In psychiatry, more intensive study of physiological and biological correlates of mental disorders has highlighted physical outcomes associated with mental disorders. At the same time, recent studies have indicated that most people with mental disorders never seek psychiatric treatment (1) and that even people who recognize their symptoms as psychologically-based prefer not to go to a separate mental health setting for treatment (2). As a result, clinicians and researchers have begun to focus on methods of identifying those who need mental health services in medical settings and on the delivery of mental health care in these same settings. "Mental health services" research has been particularly focused on these issues. Studies have shown, for example, that individuals seen in medical settings have higher rates of mental disorders (depression has been the best studied of these) than do those in the general population (3, 4). More recently, mental health services researchers have begun to examine the role of trauma in predicting who will seek medical treatment and on medical outcomes associated with trauma exposure. These studies have focused on the experience of sexual abuse and assault, childhood abuse in particular, and the range of outcomes associated with those events, including physical complaints, physical health, and service utilization.

At the same time, studies of military populations examining the relationship between combat or other military exposure (e.g., prisoner of war experiences) and poor health outcomes have increasingly found that PTSD is an important link between trauma exposure and physical health, with combat-related PTSD being associated with a range of physical health problems. As the VA increases the proportion of its patients who are women and the range of trauma exposure in male and female military populations is more clearly documented, non-combat trauma will most likely be explored for its relationships with PTSD and health as well. Conversely, the research on military populations, with its focus on PTSD, can inform mental health services studies examining how trauma is related to health outcomes. In the present article, we will summarize some of this literature along with a number of ways of understanding the association between trauma and health. Clinical assessment issues raised by this focus are raised, and suggestions for assessment and inrervention are offered.

Paula P. Schnurr, Ph.D.

Exposure to traumatic events has been linked with health complaints and poor physical functioning in the general population. For example, Golding (5) found that those reporting a history of sexual assault in the Epidemiologic Catchment Area (ECA) studies had poorer health perceptions, more reported functional limitations, and a greater frequency of both medically explained and unexplained symptoms. Examining a broader range of traumatic events in the Los Angeles ECA data, Ullman and Siegel (6) found that a traumatic event history predicted poorer health perceptions, more chronic physical limitations, and higher likelihood of a chronic medical condition, even when controlling for age, gender, social class, and psychiatric disorder. These findings hold in medical settings as well. Koss and her colleagues studied victims of crime, including rape, in more than 2,000 women who were patients in a health care organization (7, 8). Victimized women not only reported more distress, but also they had an increase of 15-25% in non-psychiatric physician visits in the first year after victimization, with utilization remaining elevated throughout the course of the

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INSIDE THIS ISSUE

In this issue we are pleased to have Dr. Bonnie Green, President-elect of the International Society for Traumatic Stress Studies, and Dr. Paula Schnurr, Deputy Director, National Center for PTSD, present an overview of the research exploring the link between trauma, PTSD, and physical health. The link between trauma and health and the recognition that most trauma victims do not seek mental health services have led to efforts to develop a dialogue between primary care and mental health providers. Recently, the National Center for PTSD initiated and coordinated a VA PTSD/Primary Care Summit meeting with VA Central Office (Mental Health Strategic Healthcare Group and Office of Ambulatory Care), Pfizer Pharmaceuticals, and the Institute for Behavioral Healthcare/Centralink. The meeting focused on PTSD as an example of a complex clinical condition linked to a decrease in physical health functioning in VA populations. VA representatives had the opportunity to discuss innovative approaches to integrating mental health screening, assessment, and treatment in primary care settings. Target outcomes related to screening for PTSD in primary and specialty care medical clinics included: a) improved patient physical health; b) increased patient satisfaction; c) increased cost savings; and d) more efficient service delivery.

We are also pleased to feature an article by Drs. Kathleen Melia and Amy Wagner that considers the application of Marsha Linehan's Dialectical Behavior Therapy to the treatment of PTSD. From a psychodynamic perspective, complicated chronic PTSD maybe understood as having become a disorder of the self in which symptoms characterized by a loss of self-cohesion and self-validation result in identity disturbance, emotional lability, and interpersonal difficulties. Borderline Personality Disorder (a disorder similarly characterized by self-invalidation and emotion dysregulation) has been shown to be successfully treated with Dialectical Behavior Therapy (DBT). Melia and Wagner highlight the importance of treatment strategies that seek to maintain treatment engagement and compliance, and review the components related to DBT psychosocial skills training. Linehan's eight assumptions about patients and treatment are also presented and might be particularly helpful to VA practitioners treating chronic combat-related PTSD, a disorder that is similarly difficult to change and slow in responding to treatment.

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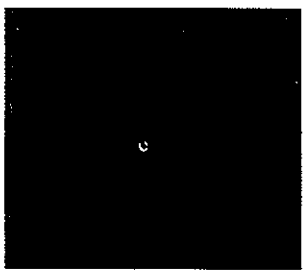

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(two-year) study. Felitti and colleagues (9) followed nearly 10,000 people in an HMO setting and found that those with four or more categories of traumatic childhood exposure were at increased risk for a variety of mental health and physical health problems, including drug abuse, suicide attempts, obesity, and chronic physical diseases. Walker and colleagues (10, 11) studied the impact of childhood sexual and physical abuse in 1,225 women in an HMO. Forty-three percent of the women were classified as having experienced some type of childhood maltreatment, and women with this history perceived themselves as having poorer health, greater functional disability, and more distressing physical symptoms than those without a trauma history. They also received more ICD-9 diagnoses for physical and psychiatric disorders by their physicians. Health care utilization and costs were elevated as well. Sexual abuse, compared to physical abuse or no abuse, was associated with the most health problems. Unfortunately, the links between trauma history and current physical problems don't necessarily get picked up in medical settings. For example, Robohm and Buttenheim (12) found that most survivors of childhood sexual abuse in their study (82%) reported that they had never been asked about a history of sexual abuse or assault by their provider, in spite of reporting more discomfort during gynecological examinations than women without abuse, as well as more intrusive thoughts, overwhelming emotions, and feelings of detachment from their bodies. Similarly, McCauley and colleagues (13) interviewed 21 women who were in group therapy for domestic violence and found that while most had seen their "regular doctor" in the prior year, only one in three had discussed the abuse with the clinician. These findings suggest that while trauma impacts are likely to be missed in primary care settings, these settings would actually be appropriate and practical places to screen for trauma history, and to intervene to reduce psychiatric distress, fear and discomfort, and inappropriate use of medical care.

Schnurr and colleagues (14, 15) have reviewed the literature on the relationship between PTSD and physical health, much of it originating from military samples. This work indicates that PTSD is consistently associated with self-reported physical health conditions, with perceived health status, and with somatic symptoms. A few studies have examined the relationship of PTSD with physician-diagnosed medical disorders as well. For example, Beckham and colleagues (16) found that combat veterans with PTSD had more physician-diagnosed medical disorders than veterans without PTSD, even controlling for health practices that may contribute to these conditions (smoking, alcohol abuse).

While studies of women in the community and in primary care settings have not tended to explore mechanisms for the link they are finding between trauma and health, studies of trauma and physical health in military populations suggest that a potent mechanism linking trauma exposure to health outcomes is the diagnosis of PTSD. For example, Taft et al. (17), using the National Vietnam Veterans' Readjustment Study (NVVRS) data set, found that, for men and women both, the effect of combat exposure on physical health conditions and functional health status was mediated through PTSD. These same relationships have also been found for older male veterans (18) and for female Vietnam war veterans (14, 19).

In spite of this increasingly sophisticated research, the mechanisms for the association between trauma and health, and even between PTSD and health, are not yet well delineated. Many psychological, physiological, and behavioral correlates of PTSD are themselves associated with poor physical health and thus could mediate relationships among trauma, PTSD, and adverse health outcomes (14, 15). For example, Friedman and Schnurr (14) suggested that cardiovascular reactivity, disturbed sleep physiology, and adrenergic dysregulation, among other biological changes in PTSD, might promote medical illness. They also suggested that psychological factors such as depression, hostility, and coping could be important as well. Depression in particular is correlated with a range of poor health outcomes (20), and recent findings implicate biological aspects of depression as causal factors in cardiovascular disease (21). Psychiatric comorbidity of any type may increase health problems, in that individuals with multiple disorders may have more severe psychiatric illness than those with a single disorder, may experience more discomfort directly from their wider range of symptoms, and/or may have a greater number of pathological processes that could affect their medical condition.

Recent studies have indicated that most people with mental disorders never seek psychiatric treatment

Risky behaviors are another potential link between trauma exposure and poor health outcomes. Many of these behaviors are directly associated with medical help seeking, and put the person at higher risk for a variety of negative medical events. In the Walker studies (10, 11), risky sexual behaviors (e.g., teen pregnancy, number of sexual partners, number of abortions) were higher in those with maltreatment histories. Trickett and colleagues (22) recently reported that sexually abused girls in their longitudinal study, compared to demographically matched non-abused girls, were more likely to have had at least one child during their teenage years (15% versus 8%), had their babies earlier on average, and had more children. Felitti et al. (9) similarly found an association between childhood trauma and increased risk for multiple sexual partners (50 or more) and sexually transmitted diseases. In a study that we recently completed and are now analyzing at Georgetown, 363 college women from six institutions were screened for trauma exposure, and data on self-reported health and sexual practices were gathered, along with structured clinical and diagnostic interviews. Although the women in this study can be considered a low-risk, high resource group, we found a number of differences in reported risk behavior and health practices. Women with childhood physical abuse and sexual abuse, compared to those without any trauma exposure, had more lifetime sexual partners

(means of 4.1 and 6.6, compared to those with no trauma, 2.6), were 3-4 times more likely to have been tested for HIV, were much more likely to have been pregnant (14% and 24%, compared to 2% of participants with no history of trauma), and were 5 to 10 times more likely to have had an abortion. They were also 2 to 4 times as likely to report pelvic pain when they were not menstruating, and they reported twice as many past year doctor visits for physical problems. These high-risk health behaviors found in a number of studies may provide additional links between trauma and medical morbidity (23, 24).

Life style practices, including smoking and alcohol abuse, which may be associated with prior trauma exposure, also potentially pose a risk for poorer health and even serious disease. Felitti and colleagues (9) found strong dose-response relationships between number of childhood traumas and likelihood of smoking, substance abuse, obesity, and lack of exercise. Given the magnitude of such relationships, one might predict that lifestyle practices would explain a substantial amount of the association between PTSD and poor health. To date, however, this has not been born out. Many studies have controlled for smoking and substance abuse, and sometimes other factors, and still have observed significant effects of PTSD on health (15). For example, using path analysis, Schnurr and Spiro (18) found that smoking and alcohol consumption did not account for a significant amount of the relationship between PTSD and self-reported physical health in a large group of older military veterans. However, behavioral factors need to be subjected to more careful scrutiny before firm conclusions can be drawn about their role in mediating the effects of trauma and PTSD.

These findings lead to a number of suggestions for assessment and intervention. In light of the association between risky sexual and reproductive behaviors and health-related outcomes, trauma screening should be a component of any public health effort to decrease risky behavior. Further, given the relatively high prevalence of trauma survivors in medical settings, primary care providers should be trained to identify trauma exposure in their patients. Taking a trauma history should be an integral part of medical history taking, particularly in patients who somatize, have high distress, and use excessive health care resources. This recommendation is challenging, since primary care providers, increasingly, have less time to spend with their patients, not more, and evaluating trauma history and psychiatric disorders would increase their burden even further. This suggests that simply training physicians about these issues may not result in better and more comprehensive care. Creative solutions are needed. Self-report screening conducted simultaneously with medical history taking may be useful. The physician would then have the option of reviewing the report, of asking the patient whether he or she wanted to discuss anything reported, or of asking additional questions to get a clinical sense of their potential connection, psychologically or temporally, with the physical complaints for which the patient sought treatment. For physicians inquiring about trauma, a clear follow-up plan or procedure needs to be in place when significant trauma is recognized. One reasonable option would be to schedule a follow-up visit to explore the impact of the trauma history more thoroughly. This procedure may result in a mental health consultation or referral, or treatment by the primary care physician for specific syndromes (i.e., PTSD or depression, usually with medication). A nurse within a practice might be designated to follow-up with patients and consider options for those who need mental health treatment. In facilities like the VA where primary care and psychiatric services may be located at the same site, closer alliances between these different areas for traumatized patients are feasible and would likely lead to better quality of care. We therefore encourage mental health practitioners to seek out partnerships with primary care physicians including mutual education and active exchange of information and patient referrals.

For the clinician seeing patients in a mental health setting, more attention can be paid to physical manifestations of psychiatric illness and to helping patients understand the links between their psychological distress and their physical health. Patients with PTSD and other disorders can be helped to understand how these psychiatric problems affect their physical health. In the VA, there is already sensitivity to the possibility of past trauma, particularly warzone stressors in mental health populations, and to the link between traumatic exposure and mental health. However, it is also important to learn about other types of trauma in a patient's past and to explore risky health-related behaviors and lifestyle issues like smoking and alcohol abuse that may contribute to health problems independently, or through their relationship with trauma. The patient's physical health problems and visits to non-psychiatric physicians should be explored as well, to learn more about his or her general health history, as well as to increase the patient's awareness of the interdependency of his or her mental and physical health. Patients can be helped to think about ways that they may take better care of themselves physically, with an eye toward improving their overall physical condition.

As we understand better the biological correlates of psychiatric conditions, and as changes in health care delivery re-centralize service access, some increased cooperation, if not collaboration, between primary and specialty care providers is inevitable. While this process is difficult in some ways, it may also present an opportunity to provide the patient with more integrated health care, and to highlight the interdependency of various aspects of illness and health.

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THE APPLICATION OF DIALECTICAL BEHAVIOR THERAPY TO THE TREATMENT OF POSTTRAUMATIC STRESS DISORDER

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Dialectical Behavior Therapy (DBT) is a multi-stage, multi-modal psychotherapy developed for the treatment of borderline personality disorder (BPD) by Linehan and her colleagues at the University of Washington. It is, at its core, a cognitive-behavioral therapy. However, it is distinguishable from other cognitive-behavioral therapies by two additional theories that underlie and guide the treatment: (a) a biosocial theory of emotion dysregulation and (b) the theory of dialectics. It is also somewhat uniquely influenced by Eastern philosophy and mindfulness practices. To date, DBT is the only empirically validated treatment for suicidal patients diagnosed with BPD. Studies have shown that, compared to treatment as usual in the community, DBT significantly reduces treatment dropout, the intensity and lethality of parasuicidal behaviors, the number of inpatient psychiatric hospitalizations, and the level of self-reported anger and social adjustment problems among individuals with BPD (1,2). Moreover, these improvements are generally maintained at one-year post-treatment (3). A complete review of DBT is well beyond the scope of this paper. Our intention is to review its key features and discuss their potential applicability to the treatment of trauma related disturbances, especially PTSD. We will first briefly review the current status of treatment for PTSD, and suggest the ways in which DBT might serve as an important adjunct to existing stage-oriented cognitive-behavioral therapies. The reader is referred to Linehan's treatment manuals for a more comprehensive explication of DBT (4,5).

Current Treatment of PTSD

Many treatments for PTSD have evolved in the twenty years since it was first recognized as a formal psychological disorder. Among them, the cognitive behavioral approaches of flooding, implosive therapy, prolonged exposure, systematic desensitization, and cognitive processing therapy have received the most empirical support (cf. 6). Unfortunately, clinical experience suggests that these interventions are often not initially effective with complex clients who have difficulty engaging in treatment and/or who are experiencing chronic crises or extreme instability in living. In recent years, a growing appreciation of the intricacy of responses to trauma has led to the development of more elaborate and inclusive treatments for PTSD (see for example, Keane et al. (7), Cloitre (8) and Najavits (9). These treatments all highlight the importance of addressing problems related to safety and stability in living, (typically called Stage I) to a much greater extent than earlier interventions. However, despite this focus, methods for addressing Stage I problems are not as well specified as those for conducting trauma-focused work. Furthermore, strategies for engaging and maintaining clients in treatment are rarely articulated. This is especially important, as many of the problems associated with PTSD (e.g., avoidance, isolation, substance abuse, etc.) may actively interfere with the therapeutic alliance and treatment compliance.

Amy Wagner, Ph.D.

DBT may serve as a useful adjunct to exposure-based trauma treatments with its specific emphasis and elaboration on Stage I treatment and its inclusion of methods to facilitate treatment engagement and compliance. Moreover, DBT has recently been successfully applied to a wider range of clinical populations (in addition to BPD) including individuals diagnosed with substance abuse, eating disorders, and adolescent behavior problems (10-12). Like BPD, these phenotypically dissimilar disorders all share as a focal problem a tendency towards emotional dysregulation, and it is likely that DBT's effectiveness with them derives at least partially from its emphasis on enhancing affect regulation. Given that many of the problems characteristic of PTSD, including irritability, emotional and physiological reactivity to cues, and emotional numbing and detachment, can readily be construed as indicators of emotional dysregulation, it is likely that DBT would be similarly applicable to the treatment of PTSD. We will now briefly review the core components of DBT (especially Stage I) and discuss their applicability to the treatment of PTSD as well as other traumatic sequelae.

Biosocial Underpinnings of DBT

Linehan's biosocial theory provides a framework by which to understand the development and maintenance of problematic behaviors and greatly informs the content of the treatment. The theory is predicated on the idea that the central problem in BPD is severe emotion dysregulation; most borderline behaviors are understood as related to this fundamental difficulty. The theory asserts that severe emotion dysregulation results from a life-long transaction between a biologically based vulnerability to emotional stimulation on the part of the individual and an environment that chronically and pervasively invalidates a person's communications of private or emotional experiences. A consequence of this transaction is that, over time, the individual learns to mistrust his/her private experiences and fails to

learn adaptive ways of expressing and regulating emotional responses.

This theory was originally proposed to account for the behaviors characteristic of BPD, but it may also explain susceptibility to (and maintenance of) PTSD reactions in some individuals. For example, biological vulnerability has been proposed as a risk factor for PTSD (13), and research suggests that severe trauma can permanently alter limbic system functioning (14), which is involved in emotion regulation. Further, trauma can be viewed as inherently invalidating of one's perceptions and experiences (15), and self-invalidation (e.g., "I shouldn't be reacting this way"; "it is my fault") may be involved in the maintenance of some PTSD-related behaviors. Based on this theory, a primary focus of DBT is teaching emotion regulation as well as self-validation, in the context of a validating therapeutic environment. This focus appears equally well suited to the needs of individuals with PTSD.

Specific Structure of DBT

In the complete, standard DBT model, therapy is structured according to stages, targets, modes, and functions of treatment. Similar to other stage-oriented treatments, the stages progress from initially focusing on safety, stability, and connection to the therapist (Stage I), to increasing the capacity for emotional experiencing (Stage II), and ultimately, to addressing more general problems in living (Stage III) and meaning issues (Stage IV). DBT also includes a pre-treatment stage in which the client is oriented to the treatment and a commitment to treatment is solicited. Most of what has been written on DBT (including the outcome studies) pertains to Stage I, and as mentioned, Stage I appears to offer a unique adjunct to standard PTSD treatments. The five stages of DBT, including the primary target and goal of each stage and individual targets for Stage I, are listed in Table 1. Due to space limitations we will only review Pretreatment and Stage I DBT and then briefly discuss the modes and functions of treatment.

Table 1. DBT Stages, Targets, and Goals

Stages	Target(s)	Goal(s)
Pre-Treatment		Commitment & Agreements
Stage I	Severe Behavioral Dyscontrol Decrease Behaviors Life Threatening Behaviors Therapy Threatening Behaviors Quality of Life Threatening Behaviors Increase Behavioral Skills Mindfulness Interpersonal Effectiveness Emotion Regulation Distress Tolerance	Behavioral Control
Stage II	Quiet Desperation	Emotional Experiencing
Stage III	Problems in Living	Ordinary Happiness & Unhappiness
Stage IV	Incompleteness	Capacity for Joy

The pre-treatment stage of DBT is designed to increase client compliance with the treatment, and may be one factor related to the lower dropout rate of DBT clients in outcome studies. The pre-treatment stage might similarly reduce drop-out among some individuals with PTSD. This phase is based on the assumptions that change is more likely to occur when one has committed to change, and that commitments are strengthened through the process of thoroughly considering one's reasons for changing and the processes involved. During pre-treatment, clients are oriented to the structure, goals, targets, and expectations of DBT and strategies are utilized to enhance their commitment (e.g., evaluating the pros and cons of changing, and the devil's advocate technique, where the therapist argues points for not changing, thereby eliciting the client's reasons for changing). Through this type of dialogue, clients refine and solidify their goals and determine whether to pursue DBT in order to reach their goals.

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Stage I DBT is structured according to targets of treatment. The primary targets include reducing life threatening behaviors, reducing behaviors that interfere with the process of therapy, and changing behaviors and circumstances that interfere with achieving a good quality of life (e.g., financial, housing, and relationship problems, substance abuse, etc.). In individual sessions, behaviors are addressed in a hierarchical manner such that life-threatening behaviors take precedence, followed by therapy interfering behaviors, and then quality of life interfering behaviors. Skills for enhancing behavioral capabilities are also taught in Stage I, usually in the context of psychoeducational groups and then reinforced in individual therapy.

This hierarchical approach appears to be especially useful when working with multi-problemed clients, and for this reason, may have particular utility for clients with PTSD. Individuals with PTSD frequently present with a host of problems in addition to PTSD symptoms, including suicidal thoughts and behavior, substance abuse, eating disorders, depression, anxiety, interpersonal problems, financial stress, etc. With so many problems, determining a focus can be a difficult task, often resulting in the sense of "putting out fires" from week to week, with little progress obtained on any one problem.

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Psychotraumatology in the Twenty-First Century

I'm sure all of you have had your fill of Y2K journalism. Most typically these articles identify the best actors, athletes, movies, songs, or the most important historical events, scientific breakthroughs or political leaders of the past century. At the risk of taxing your patience, I'd like to do something of this sort with respect to PTSD. I'd like to propose my 10 nominees for the most important scientific and clinical foci for the new century. The items on my list are not presented in order of importance, but rather in a sequence that is easiest for me to tell you about them.

1. Diagnosis will be a major concern. Starting with the construct of "complex PTSD," there will be much activity devoted to attempts to establish the validity of other post-traumatic syndromes besides PTSD. Clinicians and scholars working with survivors of prolonged trauma such as child abuse or repetitive torture during political incarceration are convinced that the PTSD diagnostic criteria do not adequately characterize the most important symptoms seen in such patients. In this regard, diagnostic constructs will be proposed to differentiate protracted vs. acute trauma; sexual versus war zone versus disaster trauma, etc. Diagnostic schemes that emphasize dissociation or somatization will be tested. Furthermore, post-traumatic medical problems will be the subject of serious scrutiny from a diagnostic perspective. And, finally, the DSM-V, VI, or VII Task Force will consider (again) whether or not to redesignate PTSD as one of a spectrum of post-traumatic syndromes, rather than as an anxiety disorder.

2. Cross-Cultural research will attempt to determine whether there are better diagnostic formulations than PTSD with which to characterize the post-traumatic distress among people from non-industrialized, non-Euroamerican ethnocultural settings. Although PTSD has been diagnosed among trauma survivors throughout the world, it is possible that other diagnostic constructs might have better ecological validity.

3. Acute Post-Traumatic Syndromes will be a major focus of research. The prominence accorded dissociative symptoms in the DSM-IV's Acute Stress Disorder had a very flimsy empirical basis. Current findings have further challenged this assumption and suggest that other acute post-traumatic symptoms may be better predictors of PTSD than dissociation. Perhaps we will find that there are several different acute post-traumatic reactions, each of which predicts a different chronic post-traumatic syndrome.

4. Assessment Instruments will need to be developed to permit rigorous research on the above diagnostic questions. Assessment tools will not be limited to traditional questionnaires or structured interviews. In addition, psychophysiological assessment strategies will be employed that are based on the unique response profile of PTSD subjects when exposed to laboratory paradigms utilizing trauma-related stimuli and measuring physiological reactivity, the startle reflex, evoked cortical potentials and sleep. Finally, neurobiological assessment employing pharmacological probes such as dexamethasone, yohimbine, and other provocative agents will find a place in routine clinical assessment.

5. Psychobiological Research on the pathophysiology of PTSD will move beyond its current focus on the adrenergic, serotonergic and hypothalamic-pituitary-adrenocortical systems. Greater attention will be given to corticotropin releasing factor, the opioid system, substance P, neuropeptide Y, and the role of glutamatergic mechanisms in information processing and memory.

6. New Medications will be spawned by the psychobiological insights mentioned above. Psychiatrists treating PTSD several decades from now may have a whole new armamentarium of pharmacological agents from which to choose. Indeed, the current medications of choice may be completely supplanted by a new generation of agents acting with greater efficacy on different brain mechanisms.

7. Psychological Research will focus on PTSD-related abnormalities in cognition, appraisal, conditionability, numbing, affect regulation, learning, memory, and dissociation. Prospective studies will show that the longitudinal course of PTSD consists of a succession of stages, each characterized by a different pattern of psychological (and psychobiological) abnormalities so that effective interventions at one stage will have little efficacy at other stages.

8. Psychotherapy Research will not only focus on the development of different treatment approaches but on predictors of successful treatment response. Such information will permit treatment matching at the outset of therapy so that (for example) exposure therapy responders can be efficiently identified and assigned to such treatment, whereas exposure therapy nonresponders can be assigned to a different treatment that is more likely to ameliorate their symptoms.

9. Risk (and Protective) Factors will be studied in protocols designed to identify genetic, experiential, psychological, or psychobiological factors that increase the risk of PTSD following traumatic exposure. In addition, we will try to develop interventions that will fortify resistance and reduce vulnerability among those individuals who are at greatest risk for developing PTSD. The flip side of this approach, moreover, is to identify those protective factors among individuals resistant to PTSD and to incorporate such knowledge into new treatment strategies.

10. Prevention of PTSD should be given the highest priority. At the level of clinical practice this means early detection of post-traumatic distress and rapid interventions following acute traumatization. At the public policy level, however, it means making the world a safer place through prevention of war, rape, child abuse, domestic violence, urban violence, traffic accidents, and hazardous work-place conditions. The good news, in this regard, is that public officials and political leaders have become increasingly sensitive to the potentially devastating effects of PTSD. The not-so-good news is that we have just begun to scratch the surface as a society and global community to improve safety and security for every man, woman, and child in the century that has just begun.

Marie B. Caulfield, Ph.D., & Annabel Prins, Ph.D.

Women, Trauma, Interpersonal Stressors and Health

Susan Doron, M.A. and Tamara Newton, Ph.D.

This column addresses the intersection of three domains: women who have experienced traumatic stressors, chronic interpersonal stressors, and physical health. We touch upon research that suggests explicit connections among these three domains. We have found that awareness of this research allows us to look at the problems women trauma survivors face in a new light, often raising alternative case conceptualization and offering additional treatment targets.

Diverse research findings suggest that emotional and biological vulnerability to social strain is heightened among women, relative to men. This may be because gender-linked socialization emphasizes relational aspects of identity more for women than for men. This has been reflected in our clinical experiences with women trauma survivors. Periods of depression, impaired functioning, and physical symptoms may follow social interactions that culminate in feelings of defeat or humiliation, and that occur when one's status in a valued social group is threatened or devalued. For example, during a work meeting, Ms. Smith asserts her ideas and she is emphatically rebuffed or "shot-down" by several socially dominant group members. At her next therapy session, Ms. Smith reports that she could not get out of bed for two days immediately following this incident and she has been experiencing severe back pain. In another more dramatic example, Ms. Johnson experiences her first heart attack soon after being shunned from a group that formed a core part of her identity and that offered her primary source of social support. For many of the trauma survivors with whom we work, the social strain is strong and constant: A typical day may consist of going from an abusive relationship at home to an undermining work environment, experiences that erode core aspects of one's social identity. These situations are of a lesser magnitude than traumatic experiences, but they resonate with similar qualities, and may revivify an undercurrent of traumatic thoughts and feelings.

These clinical observations are consistent with research on life adversity and women's psychological health. Life events characterized by a blow to a core aspect of one's identity and that include a severe interpersonal crisis, such as humiliation, entrapment, or subordination, are associated with the onset of comorbid anxiety and depression among women (1). In fact, women's well-being is more strongly affected by strained and problematic social ties, than by positive social connections. Relationships that are unequal with regard to decision-making are an especially salient part of women's social strain (2).

Similar socioemotional processes lie at the boundary of mind-body interactions. Emotional responses to interpersonal conflicts are relatively enduring; they may fail to habituate over the course of a few days, when responses to other stressors have long faded (3). Moreover, human physiology—including the cardiovascular, endocrine, and immune systems—is exquisitely attuned to the quality of social interactions. The hypothalamic-pituitary-adrenal axis, a biological system central to metabolic control and that has wide ranging physical effects, responds to nuances of status and rank in the social environment (4). In our own laboratory, we have observed that blood pressure increases in response to hostile social stressors can be attenuated if one is in a position of greater control or dominance. Thus, a woman's rank and status in her social group has clear consequences for how her physical health will fair in a negarive social environment. Chronic exposure to negative social environments constitutes repeated challenges to an individual's physiological systems, so that over time, the cumulative physiological strain may contribute to serious medical conditions (5). For women trauma survivors, elements of negative social environments may implicitly echo past traumatic experiences in a way that may be especially salient in activating these physiological alterations.

We have found that understanding these subtle, but powerful, connections between social experiences and physical processes facilitates treating women trauma survivors. After experiencing an interpersonal humiliation or defeat, a patient might be helped by re-establishing a sense of status and control to counter feelings of powerlessness and loss of face. The therapist can also assist the woman in avoiding self-blame by using cognitive restructuring to help reframe the client's experiences, and providing education on the physical and emotional impact of negative social environments. A very important intervention is providing psychoeducation on navigating competitive and challenging environments, particularly workplace situations that the patient cannot easily or quickly leave or change. To the extent that these interventions can help a woman reclaim a sense of status and value, they may inoculate her against future negative experiences and protect her physical health.

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The treatment hierarchy described here provides a guide and rationale for prioritizing targets in treatment sessions. Target behaviors are tracked by use of a diary card that clients complete daily (cf. 3). This is then used to structure the sessions.

A second feature of Stage I DBT that may be especially applicable to the treatment of PTSD is the focus on therapy interfering behaviors as a specific target of therapy. One of the biggest obstacles to treatment can be actually getting the client to do the treatment. For example, missing sessions, coming late to sessions, not working in sessions and not completing assigned homework, are common problems in the treatment of individuals with PTSD. In fact, if clients did not engage in therapy interfering behaviors, the established treatments for PTSD would likely be quite effective for the majority of clients. As a high priority target in DBT, therapy interfering behaviors become the primary focus of therapy when life-threatening behaviors have not occurred. Through the use of specific communication strategies, determination of the factors that contribute to the development and maintenance of therapy interfering behaviors, and active problem-solving efforts, therapy can progress.

DBT, especially Stage I, is further structured according to mode and function of treatment. Based on a model of comprehensive treatment, standard Stage I DBT is structured into five different modes of treatment, each with its own unique function: 1) psychoeducational skills group, to enhance client capabilities, 2) individual outpatient psychotherapy, to improve the client's motivation to change, 3) phone consultation ("coaching"), to ensure that new capabilities generalize from therapy to the client's everyday life, 4) therapist consultation group, to enhance therapist capabilities and motivation to treat effectively, and 5) guidelines for structuring the therapeutic environment to support client and therapist capabilities. We believe that comprehensive treatment of Stage I PTSD could be aided by a similar structure. Although these particular modes work well in many settings, meeting the functions of the treatment is more crucial than having a particular mode. We will next describe aspects of individual DBT and the psychoeducational skills groups that might be particularly applicable to Stage I treatment of PTSD.

Individual Psychotherapy

Individual DBT is primarily guided by behavioral theory and techniques and the theory of dialectics. It was stated above that sessions are structured according to the hierarchy of targets, by use of the diary cards. Based on behavioral theory, individual behaviors (e.g., self-harm, substance use, therapy interfering behavior) are examined through the use of chain analysis procedures, that is, step-by-step analyses of the chain of events (thoughts, behaviors, emotions, external events) that link some precipitating event to the behavior being examined. The goal is to identify "dysfunctional links," that is, places in the chain where, had things gone differently, the behavior would not have occurred. From a behavioral view, possible dysfunctional links include: 1) skills deficits; 2) cognitive factors (interpretations, beliefs, etc.); 3) conditioned emotional responses; and 4) contingencies (e.g., the dysfunctional behavior was reinforced, or more effective behavior was punished or not reinforced). Solutions (including skills teaching, cognitive restructuring, exposure, and contingency modification) are then generated according to identified dysfunctional links. This is basic behavior therapy.

Guided by the theory of dialectics, DBT adds a number of techniques to basic behavior therapy to increase effectiveness with multi-problemed clients. Briefly, dialectics refers to both a worldview and a method of persuasion. As a worldview, reality is viewed as holistic and interrelated, comprised of opposing forces (thesis-antithesis), and dynamic, i.e., perpetually changing through the synthesis of naturally opposing views and positions. As a method of persuasion, dialectics refers to the process of change that occurs through the simultaneous consideration of opposing viewpoints. Within a dialectical framework, clients in DBT are taught, encouraged, coached and cajoled to change behaviors that threaten or seriously compromise their lives or the therapy, while acceptance of the client and her life as they are in the moment is continuously emphasized.

Certain strategies are utilized in DBT, particularly in individual work, to create and maintain the tension inherent in balancing acceptance and change. For example, *validation* strategies are balanced with behavior therapy strategies, and an *irreverent* communication style by the therapist is balanced with a *reciprocal* and warm style. Specific dialectical strategies are also used in DBT, which simultaneously promote acceptance and change (e.g., the use of metaphor, and the devil's advocate technique). In addition, drawing from Eastern philosophy and mindfulness practices, clients are taught skills for acceptance of reality (i.e., mindfulness and distress tolerance), balanced with skills for change (emotion regulation and interpersonal effectiveness). A sense of speed and flow naturally arise from quickly moving between acceptance and change strategies as the therapist changes in the moment to respond to what is needed. Thus, Linehan likens DBT to good improvisational jazz. Such responsiveness is critically important when working with the multi-problemed client.

Group Skills Training

Skills training is a particularly important component of DBT. Because many of the behavioral problems characteristic of BPD reflect a pattern of deficits in self-, emotional-, interpersonal-, and behavioral-dysregulation, the four skills training modules in DBT specifically seek to enhance client capabilities by teaching new skills in self-regulation (mindfulness), emotion regulation, interpersonal effectiveness and distress tolerance. These modules and their applicability to the treatment of PTSD will only be briefly reviewed here. The reader is referred to Linehan's Skills Training Manual (5) for a detailed discussion of psychosocial skills training in DBT as well as detailed didactic materials for each module.

The mindfulness module targets problems secondary to dysregulation of the self, including feelings of emptiness, as well as brief non-psychotic disturbances (e.g., depersonalization, dissociation and delusions in response to stress). These problems, which are common to patients with PTSD as well BPD, are addressed as patients are taught to increase awareness, to observe and describe themselves and their environment in a non-judgmental manner, to "be" in the moment, and to act effectively (i.e., to do what works). An increased capacity for awareness of self might additionally benefit trauma

survivors by facilitating their ability to detect and modulate subtle forms of avoidance, which undetected would compromise the effectiveness of exposure therapy. Similarly, an increased ability to "be in the moment" might help diminish the trauma survivor's painful and debilitating tendency to re-experience past traumas while remaining ever vigilant of future threats. Finally, cultivating a non-judgmental stance towards oneself and others might he particularly helpful to trauma survivors who frequently struggle with feelings of guilt, shame and self-blame vis-a-vis their traumatic experiences.

The emotion regulation module addresses the emotional lability, depression, and irritability characteristic of BPD. Clients are taught to identify and label emotions, reduce vulnerability to emotional dysregulation through effective self-care, increase positive emotional experiences (i.e., control emotions hy controlling events that trigger emotions), increase mindfulness of current emotional experiences (i.e., experience emotions without judging or inhibiting them), act opposite to counterproductive emotional urges, and utilize distress tolerance techniques (described below). These skills should be equally applicable to the treatment of trauma survivors given that many of their symptoms stem from difficulty regulating emotions triggered by traumatic stimuli and memories. Moreover, many associated or co-morbid problems (e.g., substance abuse, eating disorders), which may at times be maladaptive attempts to regulate emotional distress, could be simultaneously addressed by enhancement of these skills.

The interpersonal effectiveness module is designed to address the intense, chaotic, and conflictual relationships characteristic of patients with BPD. The focus is on teaching skills that improve the ability of the individual to get their needs met, preserve and/or improve relationships, and maintain or increase self respect. Patients with PTSD also tend to have severe interpersonal problems secondary to the nature of their symptoms and an understandable disinclination to trust others. Thus, specifically targeting interpersonal effectiveness could have multiple benefits for PTSD patients including facilitating their ability to say no to unwanted requests, therehy potentially decreasing their risk for revictimization, and increasing the number and quality of their social supports, which is essential before more trauma-focused work can be started.

Finally, the distress tolerance module addresses patterns of behavioral dysregulation characteristic of BPD such as self-harm, suicide attempts and impulsive behaviors. In DBT such behaviors are viewed as maladaptive solutions to emotional distress, thus patients are taught skills to enable them to tolerate crises and accept life as it is. Four sets of crisis survival strategies are taught: distraction, self-soothing, improving the moment, and thinking of pros and cons (of not tolerating distress). Clients are also taught skills for acceptance, including, for example, radical acceptance (complete acceptance from deep within), and turning the mind toward acceptance (i.e., choosing to accept reality as it is). Given the focus of Stage I treatment for PTSD on emotional and behavioral stabilization, clients typically continue to experience painful trauma-related affects and crises throughout this stage. Thus, distress tolerance skills are essential if the patient is to remain in treatment, resolve their crises, develop skills, and gain the necessary supports requisite for the eventual initiation and successful completion of trauma focused work.

DBT Assumptions

In this section we briefly review a few of the assumptions about patients and treatment that Linehan has generated to facilitate therapist's motivation and effectiveness. Linehan's eight assumptions are listed in Table 2. These are not facts, but instead, ways of thinking that we believe increase the strength of the therapeutic alliance and enhance the appropriateness of the clinician's interventions and ultimately the success of the treatment.

Table 2. DBT Assumptions About Patients and Therapy

1. Patients are doing the best they can.
2. Patients want to improve.
3. Patients need to do better, try harder, and be more motivated to change.
4. Patients cannot fail in therapy.
5. The lives of suicidal, borderline individuals are unbearable as they are currently being lived.
6. Although patients may not have caused all of their own problems (recall the biosocial theory), they have to solve them anyway.
7. Patients must learn new behaviors in all relevant contexts.
8. Therapists treating individuals diagnosed with BPD need support.

Consider, for example, the first three assumptions in Table 2 in relation to clients with either BPD or PTSD. These assumptions speak to the confusion and frustration that hoth patients and clinicians experience when patients' counterproductive and/or impulsive behaviors persist despite repeated assessment, intervention and the client's expressed desire to change. That "patients are doing the best they can" is actually a philosophical position; all people, at any given time, are doing the best they can in that moment, given their current situation as well as perceptual biases, abilities, vulnerabilities and motivations. Linehan asserts that most patients are usually working hard at changing themselves, however, effort and progress can be almost imperceptihle at times. Moreover, some behaviors are so annoying or inexplicable that the therapist may assume that clients are just not trying and/or that they don't want to improve. Nonetheless, telling patients that they are not trying hard enough without exploring obstacles to change can be extremely invalidating. It also threatens the therapist's motivation and ability to objectively assess the factors that may be interfering with effort, motivation, and progress (e.g., fear, shame, skills deficits, cognitive distortions and faulty contingencies). The assumption that "patients need to do hetter, try harder, and be more motivated to change" simply dialectically balances the first two assumptions; patients may be trying as hard as they can and want to do even better, but this does not mean that their efforts or motivation are sufficient. The therapist must determine what is interfering with the client's effort and motivation and utilize problem-solving strategies to address any obstacles.

While clients with PTSD may not exhibit many of the extreme behavior problems characteristic of BPD, treating this population can be quite challenging and progress is often painfully slow and frustrating for both client and therapist. We encourage the reader to think about which of the assumptions in Table 2 might be particularly helpful in their work with their clients.

Conclusion

We have attempted to provide the reader with a brief review of the core components of DBT and the ways in which its theory and interventions might be usefully applied to the treatment of PTSD. Based on the discussion presented here, DBT appears to offer an important and potentially effective adjunct to existing cognitive-behavioral approaches. Nonetheless, research is clearly needed to empirically evaluate the effectiveness of DBT with PTSD populations. Those readers interested in learning more about DBT are encouraged to read the treatment manuals mentioned earlier, or to seek training in DBT. Information on DBT can also be obtained from the DBT website, at **www.behavioraltech.com**

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